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WHAT IS CLAIMED IS:

1. A manufacturing method of a semiconductor device, the method comprising:

5 a first step of preparing a heat-resistant resin containing carbon fibers in a form of a prepreg having a shape corresponding to an outline of a package;

10 a second step of molding said heat-resistant resin into a predetermined shape by heating and pressurizing said heat-resistant resin in a mold having a shape corresponding to an outline of a semiconductor element to be mounted;

15 a third step of mounting said semiconductor element on a substantially flat interconnection substrate having an interconnection pattern formed on a surface thereof so that an electrode terminal formed on a surface of said semiconductor element is electrically connected to said interconnection pattern;

20 a fourth step of applying an adhesive on a surface of said semiconductor element opposite to said surface on which said electrode terminal is formed and on said surface of said substantially flat interconnection substrate;

25 a fifth step of heating and pressurizing said heat-resistant resin placed on said surface of said substantially flat interconnection substrate in a mold having a shape corresponding to an outline of the package; and

30 a sixth step of forming an external connection terminal on the other surface of said substantially flat interconnection substrate so as to penetrate through said substantially flat interconnection substrate and be electrically connected to said interconnection pattern.

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2. The manufacturing method as claimed in claim 1, wherein, in said first step, said carbon fibers are woven so that the carbon fibers extend in a plurality of directions parallel to a surface of said substantially flat interconnection substrate.